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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,413	05/16/2005	Kenneth Sundberg	PR/3-23156/A/RAI 56/PCT	4017
324 7590 09/13/2007 CIBA SPECIALTY CHEMICALS CORPORATION PATENT DEPARTMENT 540 WHITE PLAINS RD P O BOX 2005 TARRYTOWN, NY 10591-9005			EXAMINER CORDRAY, DENNIS R	
			ART UNIT 1731	PAPER NUMBER
			MAIL DATE 09/13/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,413

Applicant(s)

SUNDBERG ET AL.

Examiner

Dennis Cordray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 7/13/2007 have been fully considered but they are not persuasive.

Applicant admits on p 6 that ASA is well known for use in paper, admits on p7 that it may be desirable to use purified products.

Applicant argues on p 6-7 that it is not obvious that the reduction of polymeric residues in ASA would lead to a better sized paper or better lactic acid and peroxide resistance. Applicants refer to the test results on p 13 of the instant Specification in support. Applicants continue to argue that, because Fakoukis does not mention papermaking as a use for highly purified ASA and because Tansley only mentions ASA in passing and is primarily concerned with AKD, combining the references would lead to unobvious results. Applicant argues that neither Fakoukis nor Tansley could have predicted the improved attributes of the paper. With regard to Sonodo, Applicant argues that the purified product disclosed has polymeric residues greater than 1% and that the reference teaches away from using a high purity product. With regard to product-by-process claim 10, Applicant argues that Tansley does not anticipate the claim because Tansley does not produce paper or board sized with ASA but discloses only examples using ketene dimer.

The improved properties referenced are for a paper of a specified weight having an addition level of 0.17% based on the paper weight of nearly pure ASA (0% polymeric residue and 0.19% olefin content) as compared to the same addition of a standard ASA

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(7.24-9.54% polymeric residue and 2.16-4.52% olefin content) (Specification, p 7, Table 1; pp 9-11, Pilot Paper Machine Trial). The tested papers comprise a nonspecific pulp and other organic and inorganic additives as well. The Specification does not indicate how the ASA was applied to the papers. The data are insufficient to support broadly stated claims that embody a nonspecific paper or board of any weight made from any pulp, having any additives and any amount of ASA applied at the wet end or via size press, the ASA having an amount of polymeric residue up to 1% or up to 0.5% and an amount of olefins up to 5% or up to 0.5%.

Fakoukakis recites alkenyl succinic anhydrides as industrially useful in many areas, but fails to mention papermaking. However, it is very well known in the art to use alkenyl succinic anhydrides as cellulose reactive sizing agents. Tansley et al recites in col 4, lines 22-26 that "Any conventional cellulose-reactive paper sizing agent, including, for example, alkenyl succinic anhydride, as well as ketene dimers may be usefully employed in this invention." Although ketene dimers are exemplified, and also noted as conventional, Tansley et al specifically recites alkenyl succinic anhydrides as usable. Thus, making the paper using ASA is implicitly disclosed or, at least, would have been obvious to one of ordinary skill in the art at the time of the invention as a functionally equivalent option. Also, as discussed in previous Office Actions, Fakoukakis et al discloses a process for making high purity ASA without requiring an additional (and costly) distillation step. It would at least have been obvious to one of ordinary skill in the art to use the alkenyl succinic anhydrides of in the product of Tansley et al to avoid unwanted by-products and to eliminate the cost of an extra distillation step.

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Sonoda et al does not teach away from a high purity product. As indicated in the passage cited by Applicant, Sonodo teaches that a mixture containing tar and high molecular weight polymer is usable for regular sizing purposes, but a high purity product is required for information recording material (which the Examiner construes to encompass recording papers). While Sonoda et al was not able to produce ASA having the claimed level of polymeric residue and olefins, the reference is directed to producing high purity ASA for use in some papers and provides a motivation for one of ordinary skill in the art to seek the highest purity product obtainable (p 2, top two lines and 1st full par).

Examiner's Note

The Examiner notes that Claim 13 was improperly amended because the amended claim fails to show the deletion of the phrase "at or below said maximum." The Claim has been examined as if the aforementioned phrase has been deleted. Confirmation is requested in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 14-16 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 14 and 15 recite a paper or board comprising an aqueous emulsion of alkenyl succinic anhydride. It is not clear how a paper, being a finished product, can

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comprise an aqueous emulsion. Shortly after the sizing emulsion is applied to a paper or incorporated into a web, it is no longer an aqueous emulsion, and is definitely not an emulsion after the paper is dried.

Claims 2-4, 16 and 19 depend from and inherit the limitations of the above-rejected claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tansley et al in view of Fakoukakis et al (4956478) and further in view of Frohlich et al (5969011) and Sonoda et al (JP 62106091 A, translation used for reference).

Claims 1-12: Tansley et al discloses a sized paper or board, wherein the sizing agent comprising alkenyl succinic anhydride, or ASA is added to the aqueous pulp slurry (Abstract; col 4, lines 23-26; col 5, lines 55-60). The board is coated on both sides with polyethylene (barrier coating of a food grade material) (col 1, lines 12-18; col 3, line 25). Tansley et al discloses a method for producing a carton comprising forming a sized paper or board, treating with hot hydrogen peroxide (sterilizing), then forming a packaging unit (carton) from the board (col 3, lines 3-28). The sizing agent is provided as an aqueous dispersion (col 3, lines 19 and 20).

Tansley et al does not disclose the polymeric residues or olefin content of the ASA.

Fakoukakis et al discloses a method for making a nearly pure ASA (Abstract; col 4, lines 23-26). While the polymeric residues and olefin content of the nearly pure ASA are not disclosed, examples are given of a product comprising about 99% ASA (col 5, lines 33-36; col 6, lines 1-3), thus having a maximum combined content of polymer residues and olefins of about one percent. Fakoukakis et al also discloses that the alkenyl succinic anhydrides have substantially no polymeric residue contamination (col 2, lines 13-20; claim 1). Substantially no polymeric residue is interpreted as a level low enough not to have any impact on the structure or performance of the product. The alkenyl succinic anhydrides of Fakoukakis et al are thus substantially the same as those of the instant invention.

Fakoukakis et al does not recite the use of the ASA as a sizing agent. However, ASA is a well known cellulose reactive size used in papermaking, as taught by Frohlich et al (col 1, lines 10-16).

Sonoda et al teaches the use of ASA for multiple purposes, such as a sizing agent, resin former, plasticizer, lubricant additive and rust inhibitor, which include many of the uses recited by Fakoukakis et al but with the inclusion of a sizing agent (p 2, lines 3-4). Sonoda et al also teaches that the usual methods of making ASA result in byproducts of a tar substance and a high molecular weight polymer, which result in insufficient quality of the product. Sonoda et al further teaches that a high-purity product is required for an information recording material (which the Examiner interprets

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as meaning a paper) and that numerous proposals have been made for obtaining high purity product with fewer byproducts (p 2, last 3 pars).

The art of Tansley et al, Fakoukakis et al, Frohlich et al, Sonoda et al and the instant invention are analogous as pertaining to the use of ASA. Tansley et al teaches the basic use of ASA in a paper. Fakoukakis et al teaches a method for producing high-purity ASA with the claimed amount of byproducts. One of ordinary skill in the art would have found a product containing 99% ASA and 0.5% or less of polymer residues and/or olefins to be an obvious embodiment over the disclosure of Fakoukakis et al. Frohlich teaches that ASA is a well known sizing agent used in papermaking. Sonoda et al teaches that it was well known in the art (numerous proposals made) to seek a high purity ASA to be used in information recording paper. It would have been obvious to one of ordinary skill in the art to use the claimed ASA in the paper of Tansley et al in view of Fakoukakis et al and further in view of Frohlich et al and Sonoda et al as a well known sizing agent having a low level of unwanted by-products.

Claim 13: Fakoukakis et al teaches that the products can be used in many instances without further purification (col 2, lines 13-20; col 3, lines 20-23), thus implicitly discloses that further purification is possible. With the motivation, as taught by Sonoda et al, to obtain a high-purity ASA sizing agent, it would have been obvious to one of ordinary skill in the art to further purify the product of Fakoukakis et al by removing as much of the polymeric residues as possible.

Claims 14-16: The sizing composition of the paper of Tansley et al in view of Fakoukakis et al has substantially the same structure as the instant invention, as

claimed. The sizing agent will have the claimed properties of color and rate of hydrolysis. Where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Claims 17-19: Tansley et al discloses that the preparation of stable dispersions comprising the cellulose reactive size includes conventional stabilizers and dispersing agents that falls within the competence of those skilled in the art. The preferred stabilizer is a cationic starch (col 4, lines 16-22). Frohlich et al teaches that paper sizes based on cellulose reactive sizing agents (ASA and AKD) are generally provided in the form of dispersions comprising a high molecular weight cationic polymer, cationic starch, polyamine or polyamideamine (col 1, lines 1-25). Applicant also teaches that cationic starch, cationic polyacrylamide and other cationic polymers are stabilizers well known in the art for sizing compositions using ASA (p 5, 3rd par). It would thus have been obvious to one of ordinary skill in the art to use the conventional stabilizers with high purity ASA to make a paper sizing dispersion and to have a reasonable expectation of success.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 10 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tansley et al.

Claim 10 is a product-by-process claim. The product disclosed by Tansley et al appears to be the same as or similar to the claimed product, a paper or board sized with ASA, although produced by a different process. The burden therefore shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). "In the event any differences can be shown for the product of the product-by-process claim 10 as opposed to the product taught by the reference Tansley et al, such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results: see also In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)"

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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